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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
MOORE, IAN N	
ART UNIT	**PAPER NUMBER**
2661	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/888,914	CHOI ET AL.	
	Examiner	Art Unit	
	Ian N. Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,8,10-13,18,19 and 21-24* is/are rejected.

7)☒ Claim(s) *4-7,9,14-17 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/7/02;2/22/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 1,10, 11, and 21 are objected to because of the following informalities.

Claim 1 recites, "...determining, **a transmission of time**... scrambling a frame data with an orthogonal code and a scrambling code generated **at a time being different from a generating time of the frame data** with a scrambling code offset calculated from the transmission time adjustment value..." in lines 15-18. For clearly, it is suggested to revise "a transmission of time", "a time", and "a generating time", and their related functions. In particular, it is unclear how theses following "time" are related to each other.

- **a transmission time,**
- **a time** when scrambling a frame data with an orthogonal code and a scrambling code,
- **a time** when scrambling a frame data with an orthogonal code and a scrambling code (which is) generated, and
- **a time** being different from a generation time of frame data, and a generation time of frame data with a scrambling code offset calculated from the transmission time adjustment value.

(***Note that these issues were raised by the first office action, page 2, under 35 USC § 112 second paragraph as indefinite since it is difficult to follow.***)

Claims 10 and 11 are also objected for the same reason as stated above in claim 1.

Claim 21 recites, "**the starting time** of uplink frame" in line 9. It is unclear whether "the starting time" is the same time "**a starting timing** of the uplink frame" recited in line 8. Claim 21 further recites, "**the starting point** of the uplink frame" in line 14. It is unclear whether "the starting point" is the same as "a starting timing" recited in line 8 and/or "the starting time" in line 9.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1, 8, 10, 11,18,19 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ariyoshi (US005930244A).

With regard to claims 1, 10 and 11, Ariyoshi et al discloses an acquisition circuit that operates for timing (synchronizing) acquisition of a 'spreading code (scrambling code) (column 4, lines 18-24). Ariyoshi et al discloses a base station 401 connected to a network (UTRAN) as illustrated by Fig 10 (column 3, lines 66-67). Ariyoshi et al discloses an orthogonal code assigned to each terminal station (plurality of user equipments) generated from an orthogonal code generator 212 (orthogonal codes for identifying the UEs) (column 4, lines 13-18). Ariyoshi et al discloses, at the terminal station 402, an output of the first multiplier 304 is supplied to a second multiplier 305 to be multiplied by forward link pseudo

noises PNf generated by a PN generator 312 (scrambling code generator). The PN generator 312 is set with noise patterns that are the same as the PNf specific to the forward link generated at the base station (uplink scrambling code for the UEs to identify the UTRAN). Ariyoshi et al discloses a decision circuit 213 that compares the acquired (receiving) phase while a de-spreading process for the received signal is performed in parallel, and outputs the phase difference information PD-i (measure a propagation delay) (column 4, lines 28-32). Ariyoshi et al discloses a reverse link synchronization controller 103 (controller) that generates phase jump information PJ-i for each terminal station, and in accordance with phase difference information PD-i generates a phase control instruction PC-i (time adjustment value and time offset) for each terminal station (UEs synchronize frames of uplink dedicated physical channels using the single scrambling code / UEs receive a signal providing system timing) (column 4, lines 36-43). In accordance with the contents of the phase synchronization control instruction PC-i (receiving the time adjustment value), the transmission phase controller 315 (transmission time of an uplink), outputs a control signal PS-i that is used for fine adjustment of the phases of the orthogonal code Wi and psudo noises PNr (UEs transmit a random access channel based on the system timing) (column 6, lines 61-65). Ariyoshi et al discloses a transmitting circuit (frame generator) that consists of a first multiplier 320 that multiplies the encoded data by the orthogonal code Wi (scrambling a frame with an orthogonal code) and a second multiplier (scrambler) that multiplies the output of the first multiplier by the reverse link PNr (scrambling code generated) to perform a second spectrum spread modulation (column 7, lines 25-37). Ariyoshi discloses scrambling a frame data (see FIG. 3, radio data frame from encoder 317) with an orthogonal code (see

FIG. 3, a combined system of Orthogonal code generator 318, DLY (time delay) 319, and multiplier 322) and a scrambling code generated (see FIG. 3, a combined system of PN code generator 321, DLY 319', and multiplier 320) at a time being different from a generating time of the frame data (see FIG. 3, note that a time when a combined system of 318,319 and 320 (i.e. orthogonal) scrambles the encoded frame (in accordance with PJ-i) is different from a time when a combined system of 321,319' and 322 (i.e. scramble/PN code) scrambles the encoded frame) with a scrambling code offset (see FIG.3, PS-i from transmitting phase controller 315) calculated from the transmission adjustment value (see FIG. 3, PC-i from frame de-composition); see col. 7, line 25-67.

With regard to claims 8 and 18, Ariyoshi et al discloses a decision circuit 213 that compares the acquired phase while a de-spreading process for the received signal is performed in parallel, and outputs the phase difference information PD-i (time adjustment value) (column 4, lines 28-32).

With regard to claim 19, Ariyoshi et al discloses a transmitting circuit that consists of a first multiplier 320 that multiplies the encoded data by the orthogonal code Wi and a second multiplier that multiplies the output of the first multiplier by the reverse link PNr (scrambling code) to perform a second spectrum spread modulation (column 7, lines 25-37). The PN codes of the different base stations are offset from each other.

With regard to claim 21, Ariyoshi et al discloses a method for data transmission in a communication system (see FIG. 10, communication system), the method comprising:

receiving, at a Network (see FIG. 10, base station and network), a Random Access Channel (RACH) transmitted from a User Equipment (UE) (see FIG. 10, terminal station; see FIG. 3; see col. 4, line 13-18);

calculating a transmission time adjustment value for the UE (see FIG. 1, PC-i and PD-i; see col. 4, line 25-44);

transmitting the transmission time adjustment to the UE (see FIG. 1, PC-i and PD-i; see col. 4, line 44-56);

receiving, at the UE, the transmission time adjustment value (see FIG. 1 and 3, PC-i and PD-i; see col. 4, line 44-56; see col. 6, line);

calculating a starting timing (see FIG. 3, a first time when a combined system of Orthogonal code generator 318 and DLY (time delay) 319 generates orthogonal code) of an uplink frame (see FIG. 3, encoded transmitting data 316); see col. 7, line 25-67 ;

generating an orthogonal code for spreading the uplink frame at the starting time of the uplink frame (see FIG. 3, a combined system of Orthogonal code generator 318 and DLY (time delay) 319 generates orthogonal code at first time); see col. 7, line 25-67;

generating a scrambling code for scrambling code for scrambling the uplink frame at a predetermined timing (see FIG. 3, a combined system of PN code generator 321 and DLY 319' generates orthogonal code at second/predetermine time); see col. 7, line 25-67; and

transmitting the uplink frame scrambled and spread by the scrambling code and the orthogonal code with reference to the starting point of the uplink frame (see FIG. 3, Tx RF 323; the output signal from multiplier 322 and multiplier 320 with reference to the beginning/starting/first part/point of the transmitting data); see col. 7, line 25-67.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 2, 3, 12, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ariyoshi et al (US Patent 5,930,244) in view of Dean et al (US Patent 5,839,052).

With regard to claims 2, 3, 12, 13 and 22, Ariyoshi et al does not expressly disclose that the system time is a starting time of a common pilot channel CPICH signal or that the system time is a starting time of a primary common control physical channel PCCPCH. Dean et al discloses a CDMA system in which each base station transmits a pilot (CPICHIP-CCPCH) having a common PN spreading code that is offset (system time) in phase code from pilot signals of other base stations (column 2, lines 12-19). The motivation to synchronize the pilot channel and control channel is to avoid collision between information sent by the different mobile terminals at other base stations. At the time the invention was made, therefore, it would have been obvious to one or ordinary skill in the art to which the invention pertains to obtain the invention as specified in claims 2, 3, 12 and 13.

With regard to claims 23, Ariyoshi discloses wherein the starting timing of the uplink frame is synchronized with a starting timing of a slot time of a channel (see FIG. 3, a combined system of DLY 319', DLY 319,transmitting phase controller 315 synchronizes the first/start time with the beginning/starting/first part/slot of the transmitting channel); see col. 7, line 25-67.

Ariyoshi does not explicitly disclose a common pilot channel (CPICH). However, utilizing a common pilot channel for synchronization is well known in the art. In particular, Dean teaches a common pilot channel (CPICH); see col. 2, line 12-19. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide common pilot channel, as taught by Dean in the system of Ariyoshi, for the same motivation as stated above in claim 22.

With regard to claims 24, Ariyoshi discloses wherein the transmission time adjustment value can be adjusted as much as a propagation delay of an uplink and downlink (see FIG. 1, PC-i and PD-i; see col. 4, line 44-56).

Allowable Subject Matter

6. **Claims 4-7,9,14-17 and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed 3/21/2005 have been fully considered but they are not persuasive.

Regarding claims 1, 10 and 11, the applicant argued that, "...Ariyoshi make no reference to scrambling a frame data with an orthogonal code and a scrambling code generated at a time being different from a generating time of the frame data with a

scrambling code offset calculated from the transmission adjustment value..." in page 9, paragraph 2.

In response to applicant's argument, the examiner respectfully disagrees with the argument above.

Ariyoshi discloses scrambling a frame data (see FIG. 3, radio data frame from encoder 317) with an orthogonal code (see FIG. 3, a combined system of Orthogonal code generator 318, DLY (time delay) 319', and multiplier 322) and a scrambling code generated (see FIG. 3, a combined system of PN code generator 321, DLY 319, and multiplier 320) at a time being different from a generating time of the frame data (see FIG. 3, note that a time when a combined system of 318,319 and 320 (i.e. orthogonal) scrambles the encoded frame (in accordance with PJ-i) is different from a time when a combined system of 321,319' and 322 (i.e. scramble/PN code) scrambles the encoded frame) with a scrambling code offset (see FIG.3, PS-i from transmitting phase controller 315) calculated from the transmission adjustment value (see FIG. 3, PC-i from frame de-composition); see col. 7, line 25-67.

In view of the above, **the examiner respectfully disagrees** with applicant's argument and believes that Ariyoshi as set forth in the 102 rejection is proper.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N. Moore whose telephone number is 571-272-3085. The examiner can normally be reached on 9:00 AM- 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

INM
8/18/05

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